

TUNGSTEN HALOGEN LAMP WITH OPTIMIZED SILICON HYDRIDE FILL

ABSTRACT OF THE DISCLOSURE

A tungsten halogen lamp (10) includes a light transmissive envelope (12), which encloses a tungsten filament (14) and a gaseous fill comprising an inert gas and a halogen-containing gas, such as an alkyl halide. In addition the fill includes a silicon-containing compound capable of gettering oxygen within the envelope. The atomic ratio of silicon to halogen in the envelope is selected so as to remove most, but not all of the oxygen present in the envelope. This reduces wall blackening and premature filament failure while maintaining the lamp efficiency over the lifetime of the lamp. A silicon:halogen ratio of less than about 0.5, more preferably, below about 0.4 has been found to be effective in this respect.

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